Math Information

1st Grade Math Problem Types & Strategies

Below are some math problem types your child will be expected to master this year in first grade. You will also see some of the strategies they will be taught for how to solve them. Please keep this paper handy at home to refer to as you help your child with their homework or go over classwork and assessments they have done. It is important that your child be able to show what strategy they used to solve problems as it will help them develop a deeper understanding of math concepts.

Missing Total
with 1-digit numbers

Count all strategy 3 + 4 = 7

o o o | o o o o (with a break apart line)

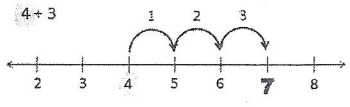
1 2 3 4 5 6 7

Count on strategy 3 + 4 = 7

4 o o o

5 6 7 (start with the bigger number)

Number line strategy



Example Story Problems

Sam has 3 oranges. He picked 4 more oranges. How many oranges does he have now?

There are 4 blue birds and 3 red birds in a tree. How many birds are there?

Missing Partner
with 1-digit numbers

Break Apart Partners 3 + __ = 7

o o o | o o o o

Draw the total amount and draw a break apart line after the partner that is known and you can see the missing partner.

Count on 3 + __ = 7

3 o o o o

4 5 6 7

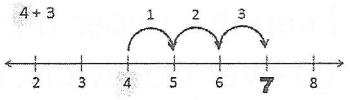
Start with the known partner and count on to the total to see how many more is needed.

Continue Missing Partner
with 1-digit numbers

Subtract/Cross off the known partner

$3 + \_\_\_ = 7$

Number line strategy



Example Story Problems

There were 7 dogs at the park. 3 of them are brown. The rest are white. How many dogs are white?

Tim had some grapes. Sara had 3 grapes. Together they had 7 grapes. How many grapes did Tim have?

Missing Total
with 2-digit numbers

Count all strategy with tens sticks and ones circles

$23 + 45 = 68$

Count the tens sticks first and the ones circles last.

Count on strategy with tens sticks and ones circles.

Start with the biggest number 45 

Decompose the number into tens and ones numbers.

$23 = 20 + 3$

$45 = 40 + 5$

$60 + 8 = 68$

Hundreds Board Strategy

Students can draw a portion of the hundreds board to show how they start at 45. Then, go down 2 more tens to 65 and then over to the right 3 more ones to 68.

Example Story problem

There were 23 brown dogs and 45 black dogs at the park. How many dogs were at the park?

Missing Partner

with 2-digit numbers

Count on strategy with tens sticks and ones circles.

$28 + \_\_\_ = 68$

Start with the known partner 28 | | | | o o o o o

28 38 48 58 68 64 65 66 67 68

Then go back and count how many more you needed to add on...45 (count by 10s and ones).

Subtract strategy (take away the known partner)

Draw 68 with 10s sticks and ones circles. Then cross off 28 to see what is left.

~~|||~~ | | | ~~o o o~~ o o o o o

Hundreds Board Strategy

Students can draw a portion of the hundreds board. They start at the known partner, 28 and go down 4 more tens to 68 and over to the right 5 more spaces to 68. They would have to keep track of how many tens they moved (4) and how many ones they moved (5) to equal 45.

<u>Example Story Problems</u>

There were 68 dogs at the park. 28 of them are brown. The rest are white. How many dogs are white?

Tim had some grapes. Sara had 28 grapes. Together they had 68 grapes. How many grapes did Tim have?

Comparing Numbers

(using the words more and fewer/less)

<u>Example Story Problems with both numbers known:</u>

A giraffe had 3 spots and a leopard had 7 spots. How many more spots does the leopard have than the giraffe

Compare circle drawing strategy

Giraffe o o o

Leopard o o o o o o o

Count on strategy

Start with the giraffe's number and think how many more would he need to equal the leopard's number.

3 o o o o

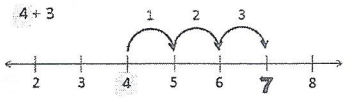
4 5 6 7 He needs 4 more.

Subtract strategy (cross off and/or draw break apart line)

Start with the leopard's number and take away the giraffe's number and that's how many extra spots the leopard has or the giraffe is missing depending on how you look at it.

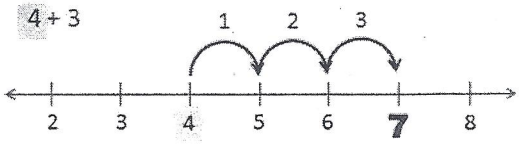
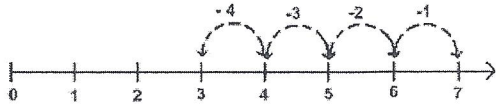
~~o o o~~ | o o o o

Equations that could match the story are $3 + \underline{4} = 7$ or $7 - 3 = \underline{4}$. Some kids will see it better as subtraction or some kids see it better as addition.

Continue Comparing Numbers	Number line strategy  **Example Story problems with I number known and a clue about the other:** Problem I: Tom has 3 toy trucks. Ed has 4 more trucks than Tom how many trucks does Ed have? Start with the known partner (3) and add 4 more. Students can do any of the above strategies to solve. Most students should probably see it as an addition problem. Problem 2: Tom as 4 fewer trucks than Ed. Ed has 7 trucks how many trucks does Tom have? Students can do any of the above strategies to solve. Most students will probably see it as a subtraction problem. (If they do a number line their arrow should be moving backward instead of forward.)

Math Strategies

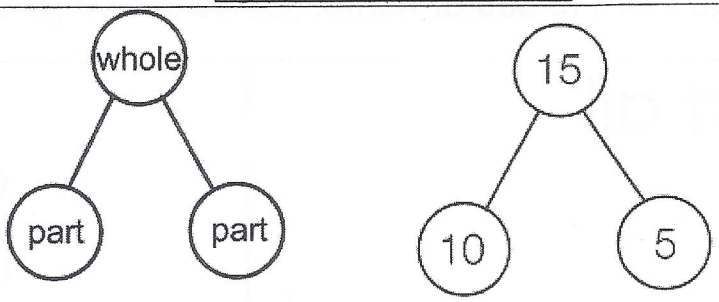
Throughout the year your child will solve problems and frequently have to show how he/she solved them to help him/her develop a deeper understanding of concepts. Below are some of the strategies your child will be taught to use this year that you can also encourage them to use at home. (Circle drawings are often used for efficiency.)

count all	3 + 4 = 7 o o o o o o o 1 2 3 4 5 6 7
count on	3 + 4 = 7 4 o o o 5 6 7 (start with the bigger number)
count back	6 – 4 = 2 Start with 6 and count back 6 o o o o 5 4 3 2
break apart line	4 + 3 = 7 o o o o | o o o This helps us see partners.
number line	 7-4=8 

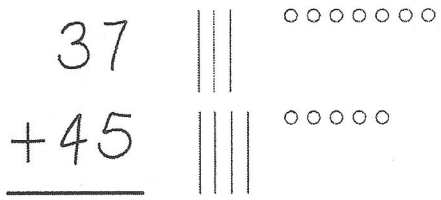
hundreds board

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

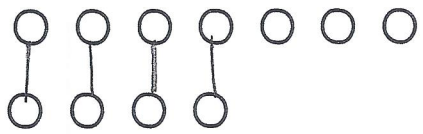
math mountain



tens sticks and ones circles



compare drawing



7 is 3 more than 4

4 is 3 fewer/less than 7